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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/559,818	01/18/2006	Isao Sogo	2005_1938A	7412

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EXAMINER	
HON, SOW FUN	
ART UNIT	PAPER NUMBER
1794	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/559,818	SOGO ET AL.	
	Examiner	Art Unit	
	SOPHIE HON	1794	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *10 April 2008*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-30* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-30* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Withdrawn Rejections

1. The 35 U.S.C. 112, 2nd paragraph rejections of claims 15-16 are withdrawn due to Applicant's amendment dated 4/10/08.

2. The 35 U.S.C. 103(a) rejections over Mitsunaga as the primary reference are withdrawn due to Applicant's amendment dated 4/10/08.

New Rejections

Claim Rejections - 35 USC § 103

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

3. Claims 1-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mitsunaga (JPO Website Machine English Translation of JP 2001-323149) in view of Dick (US 4,722,955) and Hiraishi (US 2003/0156238 which is a direct English translation of WO 2002/0099474 A1).

Regarding claim 1, Mitsunaga teaches a light diffusion sheet (light diffusible, [0001], sheet, [0080]) which is formed from a composition comprising: (A) 80 to 99.995 wt. % of aromatic polycarbonate resin (component A) (abstract); (B) 0.005 to 20 wt. % polymeric fine particles (component B) (abstract) having an average particle diameter of 0.1 to 8 μm ([0047]) ; (C) 0.0001 to 1.0 parts by weight of at least one member selected from the group consisting of a phosphate compound (component C-1) (a component D, abstract), a phosphite compound (component C-2) (a component E, abstract) which are

inherently heat stabilizers as is well known in the art; (D) 0.01 parts by weight of ultraviolet absorber (component D) (ultraviolet ray absorbent (I ingredient), [0072]); (E) 0 to 0.5 parts by weight of fluorescent whitening agent (component E) (a component G, abstract). Mitsunaga fails to teach less than 0.001 parts by weight of hindered phenol compound (component F).

However, Dick teaches that the presence of a hindered phenol compound in polycarbonate resin does not necessarily provide the desired color stability in certain environments (column 1, lines 23-30, 36-41), and is optional (abstract), thus recognizing that there are instances where a hindered phenol compound is omitted for the purpose of providing the desired color stability in hot and humid environments.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made, to have provided less than 0.001 parts by weight of hindered phenol compound (component F) in the polycarbonate resin of Mitsunaga, in order to obtain the desired color stability in certain environments, as taught by Dick.

In addition, Mitsunaga teaches that the light diffusion sheet is used with a liquid crystal panel in a liquid crystal device (display, [0080]). Mitsunaga fails to specify the type of liquid crystal device, and thus fails to teach that it is a direct backlight type liquid crystal device comprising a backlight source and a light ray adjusting film along with the liquid crystal panel and the light diffusion sheet.

However, Hiraishi teaches that a direct backlight type liquid crystal device comprising a backlight source, a liquid crystal panel and a light ray adjusting film (prism sheet, abstract) utilizes a light diffusion sheet formed from a composition that contains

additives such as an ultraviolet light absorber, for the purpose of providing the desired stability to the liquid crystal device (prevent the deterioration of a prism sheet and a liquid crystal display cell, abstract).

Therefore, since Mitsunaga is silent regarding the type of liquid crystal device, it would have been necessary and hence obvious to have looked to the prior art for a suitable type. As such, it would have been obvious to one of ordinary skill in the art at the time the invention was made, to have used a direct backlight liquid crystal device comprising a backlight source and a light ray adjusting film, as the liquid crystal device comprising the liquid crystal display panel and light diffusion sheet of Mitsunaga, in order to provide the desired display, as taught by Hiraishi.

The recitation of "which may have a protective film on a surface thereof which faces the backlight source on both surfaces thereof as desired" is one of intended use. A recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim.

Regarding claim 2, Mitsunaga teaches that the average particle diameter of the polymeric fine particles (component B) is 0.1 to 8 μm ([0047]).

Regarding claim 3, Mitsunaga teaches that the absolute value of the difference between the refractive index of the polymeric fine particles (component B) and the refractive index of the aromatic polycarbonate resin (component A) is 0.02 to 0.2 ([0047]).

Regarding claim 4, Mitsunaga teaches that the polymeric fine particles (component B) are cross-linked silicone particles ([0044]).

Regarding claim 5, Mitsunaga teaches that the heat stabilizer (component C) is a pentaerythritol diphosphite compound (component C-2) represented by general formula (2-1) of Applicant (formula (4), [0018]).

Regarding claim 6, Mitsunaga teaches that the heat stabilizer (component C) is trimethyl phosphate ([0062]),

Regarding claim 7, Mitsunaga teaches that the heat stabilizer (component C) is distearyl pentaerythritol diphosphite ([0064]).

Regarding claim 8, Mitsunaga teaches that the heat stabilizer (component C) can comprise both trimethyl phosphate ([0062]) and distearyl pentaerythritol diphosphite ([0064], a trialkylphosphate and a pentaerythritol diphosphite, abstract).

Regarding claim 9, Mitsunaga teaches that the stabilizer (component C) (phosphorus compounds (C ingredient), more than a kind, [0011]) can comprise distearyl pentaerythritol diphosphite (component C-2) ([0064]), a pentaerythritol diphosphite compound (component C-2) represented by general formula (2-2) of Applicant (formula (3), [0016]), where $Ar^3 = Ar^2$ of Applicant, and a phosphonite compound (component C-3) represented by general formula (3-1) (formula (1), [0012-0013]), where $Ar^1 = Ar^3$ of Applicant.

Regarding claim 10, Mitsunaga teaches that the heat stabilizer (component C) comprises a phosphite compound (component C-2) represented by general formula (2-2) of Applicant (formula (3), [0016]), where $Ar^3 = Ar^2$ of Applicant, and a phosphonite

compound (component C-3) represented by general formula (3-1) (formula (1), [0012-0013]), where $Ar^1 = Ar^3$ of Applicant.

Regarding claim 11, Mitsunaga teaches a specific thickness of the light diffusion sheet of 2 mm ([0082]).

Regarding claim 12, Mitsunaga teaches that the ultraviolet absorber (component D) is at least one ultraviolet absorber selected from a benzophenone based ultraviolet absorber, a benzotriazole based ultraviolet absorber and a benzoxazine absorber ([067]).

Regarding claim 13, Mitsunaga teaches that the content of the ultraviolet absorber (component D) in the composition forming the light diffusion sheet contains 0.01 parts by weight of ultraviolet absorber (component D) based on a 100 parts by weight of the total of the components A and B (ultraviolet ray absorbent (I ingredient), [0072]). Mitsunaga fails to teach that the light diffusion sheet has a protective film.

Regarding claims 14-16, Mitsunaga teaches that the content of the ultraviolet absorber (component D) in the composition forming the light diffusion sheet contains 0.01 parts by weight of ultraviolet absorber (component D) based on a 100 parts by weight of the total of the components A and B (ultraviolet ray absorbent (I ingredient), [0072]). Mitsunaga fails to teach that the light diffusion sheet has a protective film, let alone one that has the claimed composition.

However, Hiraishi teaches that the light diffusion sheet has a protective film (transparent layer laminated on at least one surface of the light diffusion layer, abstract) which is an organic polymer film containing 0.1 to 10 wt% of ultraviolet absorber

(component D^p) ([0110]) and having a thickness of 3 to 150 μm (transparent resin layer, [0117]), wherein the organic polymer is an acrylic resin, a polycarbonate resin, a polyester resin (above exemplified resins, [0116], resin for constituting the continuous phase, [0060]), or a polyethylene resin ([0061]). Hiraishi teaches that the ultraviolet absorber (component D^p) is at least one selected from the group consisting of a benzophenone based ultraviolet absorber and a benzotriazole based ultraviolet absorber ([0108]), for the purpose of providing the desired protection (prevent deterioration, abstract).

Regarding claim 17, Mitsunaga teaches that the fluorescent whitening agent (component E) is a benzoxazole based fluorescent whitening agent and/or a coumarin based fluorescent whitening agent ([0067]).

4. Claims 18-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mitsunaga (JPO Website Machine English Translation of JP 2001-323149) in view of Dick (US 4,722,955).

Regarding claim 18, Mitsunaga teaches a light diffusion sheet (light diffusible, [0001], sheet, [0080]) which is formed from a composition comprising: (A) 80 to 99.995 wt. % of aromatic polycarbonate resin (component A) (abstract); (B) 0.005 to 20 wt. % polymeric fine particles (component B) (abstract) having an average particle diameter of 0.1 to 8 μm ([0047]) ; (C) 0.0001 to 1.0 parts by weight of at least one member selected from the group consisting of a phosphate compound (component C-1) (a component D, abstract), a phosphite compound (component C-2) (a component E, abstract) which are inherently heat stabilizers as is well known in the art; (D) 0.01 parts by weight of

ultraviolet absorber (component D) (ultraviolet ray absorbent (I ingredient), [0072]); (E) 0 to 0.5 parts by weight of fluorescent whitening agent (component E) (a component G, abstract). Mitsunaga fails to teach less than 0.001 parts by weight of hindered phenol compound (component F).

However, Dick teaches that the presence of a hindered phenol compound in polycarbonate resin does not necessarily provide the desired color stability in certain environments (column 1, lines 23-30, 36-41), and is optional (abstract), thus recognizing that there are instances where a hindered phenol compound is omitted for the purpose of providing the desired color stability in hot and humid environments.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made, to have provided less than 0.001 parts by weight of hindered phenol compound (component F) in the polycarbonate resin of Mitsunaga, in order to obtain the desired color stability in certain environments, as taught by Dick.

Regarding claim 19, Mitsunaga teaches that the average particle diameter of the polymeric fine particles (component B) is 0.1 to 8 μm ([0047]).

Regarding claim 20, Mitsunaga teaches that the absolute value of the difference between the refractive index of the polymeric fine particles (component B) and the refractive index of the aromatic polycarbonate resin (component A) is 0.02 to 0.2 ([0047]).

Regarding claim 21, Mitsunaga teaches that the polymeric fine particles (component B) are cross-linked silicone particles ([0044]).

Regarding claim 22, Mitsunaga teaches that the heat stabilizer (component C) is a pentaerythritol diphosphite compound (component C-2) represented by general formula (2-1) of Applicant (formula (4), [0018]).

Regarding claim 23, Mitsunaga teaches that the heat stabilizer (component C) is trimethyl phosphate ([0062]),

Regarding claim 24, Mitsunaga teaches that the heat stabilizer (component C) is distearyl pentaerythritol diphosphite ([0064]).

Regarding claim 25, Mitsunaga teaches that the heat stabilizer (component C) can comprise both trimethyl phosphate ([0062]) and distearyl pentaerythritol diphosphite ([0064], a trialkylphosphate and a pentaerythritol diphosphite, abstract).

Regarding claim 26, Mitsunaga teaches that the stabilizer (component C) (phosphorus compounds (C ingredient), more than a kind, [0011]) can comprise distearyl pentaerythritol diphosphite (component C-2) ([0064]), a pentaerythritol diphosphite compound (component C-2) represented by general formula (2-2) of Applicant (formula (3), [0016]), where $Ar^3 = Ar^2$ of Applicant, and a phosphonite compound (component C-3) represented by general formula (3-1) (formula (1), [0012-0013]), where $Ar^1 = Ar^3$ of Applicant.

Regarding claim 27, Mitsunaga teaches that the heat stabilizer (component C) comprises a phosphite compound (component C-2) represented by general formula (2-2) of Applicant (formula (3), [0016]), where $Ar^3 = Ar^2$ of Applicant, and a phosphonite compound (component C-3) represented by general formula (3-1) (formula (1), [0012-0013]), where $Ar^1 = Ar^3$ of Applicant.

Regarding claim 28, Mitsunaga teaches that the ultraviolet absorber (component D) is at least one ultraviolet absorber selected from a benzophenone based ultraviolet absorber, a benzotriazole based ultraviolet absorber and a benzoxazine absorber ([067]).

Regarding claim 29, Mitsunaga teaches a specific thickness of the light diffusion sheet of 2 mm ([0082]).

Regarding claim 30, Mitsunaga teaches that the fluorescent whitening agent (component E) is a benzoxazole based fluorescent whitening agent and/or a coumarin based fluorescent whitening agent ([0067]).

Response to Arguments

5. Applicant's arguments have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not

mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication should be directed to Sow-Fun Hon whose telephone number is (571)272-1492. The examiner can normally be reached Monday to Friday from 10:00 AM to 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Keith Hendricks, can be reached on (571)272-1401. The fax phone number for the organization where this application or proceeding is assigned is (571)273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Sophie Hon/

Sow-Fun Hon

/KEITH D. HENDRICKS/
Supervisory Patent Examiner, Art Unit 1794